



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,035	09/26/2003	Sang-Seok Kang	SAM-0489	7715

7590 08/24/2005  
Steven M. Mills  
MILLS & ONELLO LLP  
Suite 605  
Eleven Beacon Street  
Boston, MA 02108

EXAMINER

TRAN, THIEN F

ART UNIT PAPER NUMBER

2811

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

41A

<b>Office Action Summary</b>	Application No. 10/672,035	Applicant(s) KANG ET AL.	
	Examiner Thien F. Tran	Art Unit 2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 May 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 14-21 and 25-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 22-24 and 31-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Claim Objections***

Claim 8 is objected to because of the following informalities: lines 2-3, "the second ends" should be changed to --the first ends-- for consistency with changes made to other claims, such as claim 10, claim 12. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-13 and 31-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Lehr et al. (US 6,803,612).

Lehr et al. disclose a fuse arrangement (Figure 1) comprising a first fuse (top fuse) having a first end 85 and a second end 80; and a second fuse 30 having a first end 85 and a second end 80, wherein the first end 85 of the first fuse is spaced by a first interval from the first end of the second fuse, and the second end 80 of the first fuse is spaced by a second interval from the second end of the second fuse, the second interval being different than the first interval; wherein the first ends 85 of the first and second fuses have widths substantially

Art Unit: 2811

the same as those of the second ends 80 of the first and second fuses (claims 31-33).

Regarding claim 2, the first interval is wider than the second interval and the first ends 85 of the first and second fuses are disposed at regions 30 considered as a cutting region.

Regarding claim 3, the first end second ends of the first and second fuses are disposed in a row (Y) direction.

Regarding claim 4, the first and second ends of the first fuse (top fuse) are connected in a straight line and the first end of the second fuse (element 30) is laterally offset from the second end of the second fuse.

Regarding claim 5, Lehr et al. further disclose a third fuse and a fourth fuse, the first and second fuses forming a first fuse group and the third and fourth fuses forming a second fuse group, wherein the second fuse group is positioned such that the second fuse group is adjacent to the first fuse group and the second fuse group is rotated 180 degrees from the first fuse group.

Regarding claim 6, the first ends of the first and second fuses are vertically connected to the second ends of the first and second fuses, respectively.

Regarding claim 7, Lehr et al. disclose a first fuse (top fuse) having a first end 85 and a second end 80 connected in a straight line; a second fuse (element 15) having a first end 85 and a second end 80 connected in a straight line; a third fuse (element 30) having a first end spaced by a first interval from the first end of the first fuse and a second end spaced by a second interval from the second end

Art Unit: 2811

of the first fuse, the first end of the third fuse 30 being laterally offset from the second end thereof; and a fourth fuse (third element from the top fuse) having a first end spaced by the first interval from the first end of the second fuse 15 and a second end spaced by the second interval from the second end of the second fuse, the first end of the fourth fuse being laterally offset from the second end thereof.

Regarding claims 8 and 12, the first ends of the first and third fuses are disposed parallel in one row direction and the first ends of the second and fourth fuses are disposed parallel in another row direction.

Regarding claim 9, the first interval is wider than the second interval.

Regarding claim 10, the first ends of the first and third fuses are disposed at a first cutting region formed along a first row and the first ends of the second and fourth fuses are disposed at a second cutting region along a second row.

Regarding claim 11, the first top fuse and the second fuse (element 15) are disposed to encompass the third fuse 30 and the fourth fuse.

Regarding claim 13, the first interval between first ends 85 is wider than the second interval between the second ends 80, the first ends 85 of the first fuses are disposed at a first cutting region (region shown as element 30) formed along a first row, and the first ends of the second fuses are disposed at a second cutting region (region 15) formed along a second row.

Claims 7-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (US 6,172,896).

Art Unit: 2811

Lee discloses a fuse arrangement (Figure 2) comprising a first fuse 221 having a first end 221c and a second end 221a connected in a straight line; a second fuse 226 having a first end 226a and a second end 226c connected in a straight line; a third fuse 222 having a first end 222c spaced by a first interval FS from the first end 221c of the first fuse and a second end 222a spaced by a second interval PS from the second end of the first fuse, the first end of the third fuse being laterally offset from the second end thereof; and a fourth fuse 225 having a first end 225a spaced by the first interval FS from the first end of the second fuse and a second end 225c spaced by the second interval PS from the second end of the second fuse, the first end 225a of the fourth fuse being laterally offset from the second end 225c thereof.

Regarding claim 8, the first ends (221c, 222c) of the first and third fuses are disposed parallel in one row direction and the first ends (226a, 225a) of the second and fourth fuses are disposed parallel in another row direction.

Regarding claim 9, the first interval FS is wider than the second interval PS.

Regarding claim 10, the first ends (221c, 222c) of the first and third fuses are disposed at a first cutting region 231 formed along a first row and the first ends (226a, 225a) are disposed at a second cutting region 232 formed along a second row.

Regarding claim 11, Lee discloses a fuse arrangement (Figure 2) comprising a first fuse group 211 including a plurality of first fuses (221-223) each having a first end (221c-223c) and a second end (221a-223a), wherein the

Art Unit: 2811

first ends (221c-223c) of the first fuses are spaced from one another, the first and second ends of one of the first fuses (fuse 221) are connected in a straight line, and the first ends (222c, 223c) of remaining ones (fuses 222, 223) of the first fuses become laterally offset from the second ends (222a, 223a) thereof; and a second fuse group 212 including a plurality of second fuses (224-226) each having a first end and a second end, wherein the first ends (224a-226a) of the second fuses are spaced by a first interval FS from one another, the second ends (224c-226c) of the second fuses are spaced by a second interval PS from one another, the first and second ends of one of the second fuses (fuse 226) are connected in a straight line, and the first ends of remaining ones of the second fuses (fuses 224, 225) are laterally offset from the second ends thereof, wherein the first and second fuses (fuses 221 and 226) having the first and second ends connected in a straight line are disposed to encompass the remaining of the first and second fuses.

Regarding claim 12, the first ends (221c-223c) of the first fuses are disposed parallel in one row direction and the first ends (224a-226a) of the second fuses are disposed parallel in another row direction.

Regarding claim 13, the first interval FS is wider than the second interval PS, the first ends (221c-223c) of the first fuses are disposed at a first cutting region 231 formed along a first row, and the first ends (224a-226a) of the second fuses are disposed at a second cutting region 232 formed along a second row.

***Claim Rejections - 35 USC § 103***

Art Unit: 2811

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US 6,172,896).

Lee as described above discloses the fuse arrangement as claimed in claims 22-24 and further discloses memory cells; redundant memory cells for replacing defective memory cells; and a plurality of fuse boxes inherently for storing defect addresses. Lee does not explicitly disclose the memory cells arranged in rows and columns. However, it is conventional in the art to form memory cells in rows and columns. Therefore, forming the memory cells in rows and columns would have been obvious modification.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-13, 22-24 and 31-33 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



Art Unit: 2811

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thien F. Tran whose telephone number is (571) 272-1665. The examiner can normally be reached on 8:30AM - 5:00PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

Art Unit: 2811

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tt  
August 21, 2005

  
**THIENTRAN**  
**PRIMARY EXAMINER**